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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,447	11/20/2003	Bernard Arthur Couture	839-1446	6659

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EXAMINER

NGUYEN, NINH H

ART UNIT PAPER NUMBER

3745

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,447

Applicant(s)

COUTURE ET AL.

Examiner

Ninh H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/23/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4-12, 14-20, 22-26, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukazawa et al. (JP 359115403 A).

Fukazawa discloses a turbine (Fig. 1) comprising a rotor including at least one bucket 2; a stator 1 defining a main casing for the rotor; and a seal assembly including: a base seal member 6 configured to be positioned on an inside surface of the main casing; and an abradable seal member 5 designed and configured for application to a tip portion of the at least one bucket, the abradable seal member being positionable in facing relation to the base seal member;

wherein the inside surface of the main casing inherently designed to be spaced a predetermined distance from the tip portion of the bucket, within a predetermined tolerance;

wherein the stator and rotor are constructed such that the abradable seal member of the at least one bucket will allow the base seal member to cut a groove into the abradable seal member, if, operation, contact occurs between the abradable seal member and the base seal member (abstract);

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wherein the base seal member is designed as a modular, replaceable insert selectively insertable within the inside surface of the main casing (Fig. 1);

wherein the abradable seal member is a coating (abstract);

wherein the base seal member is a knife edge; and

wherein the turbine further comprising a bucket cover 4 provided to the tip of the bucket, the abradable seal member 5 being provided to the bucket cover;

3. Claims 1, 2, 4-12, 14-20, 22-26, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated Foster (3,339,933).

Foster discloses a turbine (Figs. 1-4) comprising a rotor including at least one bucket 22 (Fig. 4); a stator 24 defining a main casing for the rotor; and a seal assembly including: a base seal member 32 configured to be positioned on an inside surface of the main casing; and an abradable seal member 16 designed and configured for application to a tip portion of the at least one bucket, the abradable seal member being positionable in facing relation to the base seal member;

wherein the inside surface of the main casing inherently designed to be spaced a predetermined distance from the tip portion of the bucket, within a predetermined tolerance;

wherein the stator and rotor are constructed such that the abradable seal member of the at least one bucket will allow the base seal member to cut a groove into the abradable seal member, if, operation, contact occurs between the abradable seal member and the base seal member (col. 2; lines 50-55);

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wherein the base seal member is designed as a modular, replaceable insert selectively insertable within the inside surface of the main casing (indicated by the flange portion of the casing portion 24);

wherein the abradable seal member is a coating (col. 4; lines 65-69);

wherein the base seal member is a knife edge (Fig. 4);

wherein the turbine further comprising a bucket cover (Fig. 4; shown at 30) provided to the tip of the bucket, the abradable seal member 16 being provided to the bucket cover; and

wherein the bucket cover has a roughened outer surface to promote secure fixing of the abradable seal member to the outer surface of the bucket cover outer surface (col. 3, lines 53-55).

4. Claims 1, 2, 4-12, 14-20, 22-25, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Nava et al. (6,533,285).

Nava discloses a turbine (Figs. 1, 2) comprising a rotor including at least one bucket 20; a stator 28 defining a main casing for the rotor; and a seal assembly including: a base seal member 30 configured to be positioned on an inside surface of the main casing; and an abradable seal member 34 designed and configured for application to a tip portion of the at least one bucket, the abradable seal member being positionable in facing relation to the base seal member (col. 2; lines 32-36);

wherein the inside surface of the main casing inherently designed to be spaced a predetermined distance from the tip portion of the bucket, within a predetermined tolerance;

wherein the stator and rotor are inherently constructed such that the abradable seal member of the at least one bucket will allow the base seal member to cut a groove into the

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abradable seal member, if, operation, contact occurs between the abradable seal member and the base seal member;

wherein the base seal member is designed as a modular, replaceable insert selectively insertable within the inside surface of the main casing (col. 2, lines 32-36);

wherein the abradable seal member is a coating (col. 2, lines 32-36);

wherein the base seal member is a knife edge (Fig. 2); and

wherein the abradable seal member is provided directly to a distal end of the tip portion of the bucket (col. 2, lines 32-36).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuzawa.

Fukuzawa discloses all the limitations except the predetermined distance between the inside surface of the main casing and the tip portion of the bucket is not between about .250 mm and about 2.05 mm and the predetermined tolerance is between about .0250 and about .1 mm as claimed.

Since the applicant has not disclosed that having the predetermined distance between the inside surface of the main casing and the tip portion of the bucket being between about .250 mm

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and about 2.05 mm and the predetermined tolerance is between about .0250 and about .1 mm solves any stated problem or is for any particular purpose above the fact that the tip portions of the blades of a turbine have to be closed to the inside surface of the main casing to prevent losses caused by working fluid flowing pass the tips of the buckets; and it appears that the turbine of Fukazawa would perform equally well with the dimensions as defined claimed by applicant, it would have been an obvious matter of design choice to modify the turbine of Fukazawa by utilizing the specific dimensions as claimed.

7. Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster in view of Brandon (5,049,032).

Foster discloses all the limitations including a stationary seal comprising a base seal member attached to the main casing and an abradable seal member formed on the rotor as shown in Figure 1. However Foster does not disclose a nozzle vane provided with a supplemental base seal member and the rotor includes an outer surface provided with a supplemental abradable seal in facing relation with the supplemental base seal member as claimed.

Brandon teaches a turbine seal assembly comprising a main casing 15, a rotor 23, a nozzle vane 13 comprising a supplemental base seal 14 to prevent leakage that bypassing nozzle vane 13 (col. 2, lines 41-42).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the turbine of Foster with a nozzle vane having a supplemental base seal member and the rotor includes an outer surface provided with a supplemental abradable

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seal in facing relation with the supplemental base seal member for the purpose of preventing leakage bypassing the nozzle vane as taught by Brandon.

Prior Art

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure and consists of 1 patent.

Parsons et al. (889,319) is cited to show a turbine comprising a nozzle with a base seal member and a rotor having an abradable seal member on the outer surface thereof.

Conclusion

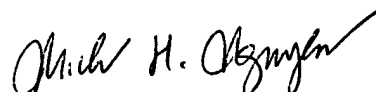
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (571) 272-4823. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (571) 272-4820. The fax number for this group is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, please go to <http://pair-direct.uspto.gov> or contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).


NINH H. NGUYEN
PRIMARY EXAMINER

Nhn
January 7, 2005